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Prokaryotic diversity and distribution in different habitats of an alpine rock glacier-pond system

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Statistical differences (F-values from ANOVA and χ^2 from Kruskal-Wallis tests) in geochemical parameters, abundance of archaeal and bacterial 16S rRNA genes and alpha diversity estimators among the different sampling sites. Data collected in 2015 and 2016 were analysed separately.

	2015	2016
	F _(4,15)	F _(4,15)
TOC	175.2 ^{***}	190.5 ^{***}
TN	76.6 ^{***}	167.4 ^{***}
DOC	44.3 ^{***}	20.5 ^{***}
TDN	23.3 ^{***}	26.2 ^{***}
NH ₄ ⁺	16.3 ^{***}	51.3 ^{***}
NO ₃ ⁻	32.5 ^{***}	4.1 [*]
Log copies Arch	1.7 ^{ns}	13.0 ^{***}
Log copies Bact	25.6 ^{***}	19.6 ^{***}
	F _(2,9)	F _(2,9)
pH	64.4 ^{***}	5.7 [*]
	$\chi^2_{(4,14)}$	$\chi^2_{(4,15)}$
C/N	11.0 [*]	12.4 ^{**}
Observed OTUs Arch	11.4 [*]	11.4 [*]
Chao 1 Arch	11.6 [*]	11.8 [*]
Shannon Arch	11.8 [*]	11.7 [*]
Simpson Arch	12.4 ^{**}	11.6 [*]
Good's Coverage Arch	11.3 [*]	11.9 [*]
Observed OTUs Bact	8.73 ^{ns}	10.7 [*]
Chao 1 Bact	11.4 [*]	10.5 [*]
Shannon Bact	8.7 ^{ns}	10.6 [*]
Simpson Bact	11.8 [*]	10.2 [*]
Good's Coverage Bact	10.9 [*]	11.0 [*]

Significance levels: ***P < 0.001; **P < 0.01; *P < 0.05; ns, nonsignificant

Pivot statistics from PERMANOVA analysis on different distance matrixes calculated for archaeal and bacterial communities. Different sampling points (RG, S1, S2, S3, G) were compared.

Distance matrix	Df	Sum Sq	Mean Sq	Pseudo-F	R ²	P
<i>Archaea</i>						
Bray-Curtis						
Sample	4	7.4886	1.87215	13.696	0.69537	0.001
Residuals	24	3.2806	0.13669		0.30463	
Total	28	10.7692			1	
Weighted UniFrac						
Sample	4	4.8387	1.20967	35.779	0.85639	0.001
Residuals	24	0.8114	0.03381		0.14361	
Total	28	5.6501			1	
Unweighted UniFrac						
Sample	4	4.4253	1.1063	7.9595	0.57019	0.001
Residuals	24	3.3359	0.139		0.42981	
Total	28	7.7612			1	
<i>Bacteria</i>						
Bray-Curtis						
Sample	4	6.3229	1.58072	23.357	0.79562	0.001
Residuals	24	1.6243	0.06768		0.20438	
Total	28	7.9472			1	
Weighted UniFrac						
Sample	4	1.77194	0.44298	34.226	0.85084	0.001
Residuals	24	0.31063	0.01294		0.14916	
Total	28	2.08257			1	
Unweighted UniFrac						
Sample	4	3.895	0.97376	8.1602	0.57628	0.001
Residuals	24	2.8639	0.11933		0.42372	
Total	28	6.759			1	

Df = degrees of freedom; Sum Sq = sum of squares; Mean Sq = mean of squares.